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# Community Gains from conservation farming

Issued  
May 1951

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EIGHT YEARS of conservation farming have improved the stability of the agriculture and brought increased production to the farmers of the South Tillamook Soil Conservation District. Located in Oregon's most noted dairy area, famed for its Tillamook Cheese, this District has increased its output of butterfat through steady gains nearly 15 percent from 1941 to 1948. This is a result of its program for better use of its land resources. During this same period, the part of Tillamook County outside the District has had a fluctuating, but declining, production, which by comparison has dropped a total of about 10 percent.

Tillamook County offers an excellent opportunity to appraise some of the effects of the program of a soil conservation district (fig. 1). The county, because of its topographic features, forms a natural agricultural area. The narrow valley bottoms, coastal benches, and tide flats which make up most of the agricultural land of the county are of the same general character throughout the area.

Marketing facilities within the county are used very little by farmers living outside its boundaries. Dairy products, making up more than 83 percent of the total value of all farm products in the county, are marketed cooperatively through the Tillamook County Creamery Association. This parent organization is

made up of 16 local community associations, each with a cheese factory and plant which serve as the milk-receiving station for the farms in the vicinity.<sup>1</sup> By means of these local cheese factories, it is easy to compare the production from farms within the South Tillamook Soil Conservation District with that from farms in the rest of the county. This comparison is summarized in table 1 for 1940 through 1948.

In order to understand these summaries better, it should be pointed out that there are eight cheese factories located in each area. The Soil Conservation District, however, includes only about 32 percent of the dairy farms and about 27 percent of the agricultural land of the county. One of the smaller factories situated on the edge of the District draws a part of its production from territory outside the District, but the amount of butterfat involved would have a negligible effect on the results.

These results show the total production marketed through the Tillamook County Creamery Association. During the early part of the period, five comparatively small private creameries also were operating in the county outside the District but were all absorbed by the association be-

<sup>1</sup> The Tillamook County Creamery Association opened a new modern central plant late in 1949.



**Figure 1.**—Before the South Tillamook Soil Conservation District's program for drainage and better use of land was started, tussock-infested pastures such as the one shown in the right foreground were typical of the pastures in the wet lands of the valleys. Today "improved" high-yielding pastures are typical.

**TABLE I.**—*Comparison of butterfat production from farms within the Soil Conservation District and from farms in the rest of Tillamook County, 1940–48<sup>1</sup>*

Year	Butterfat production within the District				Butterfat production in rest of Tillamook County			
	Butterfat delivered to factories	Part of county total	Increase over 1941 production		Butterfat delivered to factories	Part of county total	Decrease from 1941 production	
			Pounds	Percent			Pounds	Percent
1940.....	1,186,226	32.0	.....	.....	2,518,733	68.0	.....	.....
1941.....	1,363,743	31.8	.....	.....	2,929,895	68.2	.....	.....
1942.....	1,439,296	33.5	75,553	5.5	2,851,332	66.5	78,563	2.7
1943.....	1,424,199	35.8	60,456	4.4	2,552,650	64.2	377,245	12.9
1944.....	1,558,742	37.4	194,999	14.3	2,606,431	62.6	323,464	11.0
1945.....	1,627,843	37.8	264,100	19.4	2,678,071	62.2	251,824	8.6
1946.....	1,595,127	39.8	231,384	17.0	2,411,342	60.2	518,553	17.7
1947.....	1,669,194	38.4	305,451	22.4	2,673,736	61.6	256,159	8.7
1948.....	1,632,786	38.8	269,043	19.7	2,577,639	61.2	352,256	12.0
Total .....	13,497,156	36.2	1,400,986	14.7	23,799,829	63.8	2,158,064	10.5

<sup>1</sup> Data taken from records of the Tillamook County Creamery Association.

fore the end of 1948. No records were available on the production handled by them. One went out of business in 1943, one in 1945, and two in 1947. The fifth one was taken over by the association about the middle of 1948. Its production for the first half of 1948 is estimated to be around 50,000 to 60,000 pounds of butterfat, based on the 1949 records of this account.

In 1947 the Portland fluid-milk market began to draw on the Tillamook area for supplies, and 128,445 pounds of butterfat were shipped by producers to Portland that year. In 1948 this increased to 182,504 pounds. All this production came from the area outside the District, making the total for 1948 approximately 2,815,000 pounds of butterfat, or 63 percent of the county total. This is still well below the 1941 peak production of this area, which does not include the production from the five creameries for which records are not available.

Let's take a closer look at the production trends of the two areas as indicated by table 1. In the area outside the District, production soared to a peak in 1941 and then fluctuated widely from one year to the next. But the trend since 1941 has been downward. The sudden jump in 1941 came primarily as a result of heavy in-shipments of feed, especially hay. Available feed supplies and price relations were particularly favorable. Farmers could afford to boost their production by buying more cows and bringing in hay from the Willamette Valley and east of the Cascades. This they did.

Shortly after the United States entered World War II, the situation began to change. Labor shortages and price controls became influencing factors. Shortages also developed in available feed supplies and it became necessary to ship in hay from greater distances. These factors and others all combined in varying degrees from one season to the next to create a fluctuating and unstable production situation in this area. Heavy in-shipments of hay have continued following the war years, but improvements in pastures outside the District have failed

to keep pace with the additional number of livestock in the area. The heavier use of these pastures during the pasture season has undoubtedly caused some deterioration so that the net effect has been a decrease in the local feed supplies.

Definite figures on the amount of feed shipments into Tillamook County could not be obtained. The two principal feed dealers in the county both estimated that hay in-shipments have increased from 300 to 500 percent since 1940.

Dairymen inside the Soil Conservation District admit they also use more hay, but there is an important difference. The increase in the size of their dairy herds has been geared to the improvement of their pastures. While the total amount of hay consumed is larger because of a greater number of cows, the amount fed per cow is less than formerly. Through an orderly and proper development of land resources and the application of scientific management practices, these dairymen have maintained a steady upward trend in production.

This trend is emphasized by a study

TABLE 2.—*Number of cooperating and noncooperating farms in the South Tillamook Soil Conservation District grouped by amounts of butterfat produced, 1940, 1944, and 1948*

FARMS COOPERATING WITH THE DISTRICT

Year	Butterfat production (in thousands of pounds)				
	Less than 5	5 to 10	10 to 15	15 to 20	More than 20
1940 .....	63	42	9	3	1
1944 .....	38	58	18	4	2
1948 .....	30	57	23	7	3

FARMS NOT COOPERATING WITH THE DISTRICT

1940 .....	29	9	0	1	0
1944 .....	28	8	2	0	1
1948 .....	25	12	1	0	0

of the farms cooperating with the District conservation program. Butterfat-production figures were obtained on 120 of these farms from the records of the Tillamook County Creamery Association for the years 1940 through 1948. As shown in table 2, 63 of them in 1940 were producing less than 5,000 pounds of butterfat. By 1948, only 30 of these farms were still producing less than 5,000 pounds. Moreover, the number of farms in each of the other groups shown in table 2 increased consistently during this period.

In contrast, of the 39 farms inside the District that have not entered into any conservation plans with the District, 29 were producing less than 5,000 pounds in 1940 (table 2). By 1948 only 4 of these farms had increased their production to more than 5,000 pounds. Similarly, the higher producing farms in 1940 changed little in their butterfat production by 1948.

To explain how these differences came about, one should go back to the beginning of the District. Early in 1940 the farmers in the lower Nestucca Valley and Sand Lake areas of Tillamook County voted to organize the South Tillamook Soil Conservation District to do something about their land problems.

For years they had been troubled with poor drainage of wet lands along the narrow coastal valley bottoms and tide flats (fig. 1). This was despite the organization of three different drainage districts in the area dating back to 1919 and 1920. Poor drainage meant low-producing native grasses, tussocks, and other vegetation which could tolerate these wet conditions.

The five local farmer-supervisors of the Soil Conservation District were quick to take action towards solving this problem. One of the first tasks undertaken by the board of supervisors was to im-



Figure 2.—A dragline digging a drainage ditch through an unimproved pasture. Poor drainage is indicated by heavy growth of tussocks just beyond the machine and by the scattered clumps in the foreground.



Figure 3.—This improved pasture is a typical result of conservation farming in the South Tillamook Soil Conservation District.

prove the major drainage facilities. The tide gates of the old drainage districts were lowered and improved. Main outlet ditches were cleaned out or reconstructed. New drainage ditches were dug, and dikes were repaired (fig. 2). These major improvements made possible the more effective planning and development of drainage and other conservation needs on the individual farms. With the main ditches and outlets in condition to handle the excess water satisfactorily, individual farmers were encouraged to proceed with the District's program on their lands.

By 1948, 200 of the 261 farmers in the District had entered into agreements with the District to carry out soil- and water-conservation plans on their farms. Since dairying is the chief agricultural enterprise, the primary use of the agricultural land is for pasture. A program of conservation farming in the area consequently is largely concerned with pasture production (fig. 3).

Establishment of adapted, high-yielding pasture grasses was one of the first orders of business. As rapidly as the drainage problems were improved on the bottom lands, native pastures were plowed up, cleared of any trees and brush, leveled, and seeded to temporary pastures of ryegrass, red clover, and alsike clover. This permitted time for rotting of tussocks and the preparation of a better seedbed for improved long-lived pastures. Permanent pasture seedings varied with irrigation, soil drainage of bottom lands, and hill lands. Irrigated pastures were seeded to Alta fescue and Ladino clover. Meadow foxtail or Alta fescue and big trefoil were used on the wetter bottom lands. Alta fescue, orchard grass, white clover, and English ryegrass were used on the well-drained bottom lands. Non-irrigated hill lands were seeded to Alta fescue, orchard grass, English rye, creeping red fescue, and subterranean clover.

Management became the most important factor in production once the pas-

tures were established. A fertilizer program and other management practices, including rotation grazing, clipping the older growth back periodically, and harrowing to scatter droppings and mole hills, were applied to obtain high uniform yields over a long pasture season.

Development of sprinkler irrigation has been an important contributing factor to increased forage production within the District (fig. 4). Thirty-eight percent of all the dairy farms inside the District have sprinkler irrigation systems. This is compared with only 11 percent of the dairy farms in the remainder of the county. Sprinkler irrigation is important in maintaining a lush pasture growth during the usually dry summer from late June through September. Improved pastures of the better grass mixtures hold an important advantage over lower producing pastures in paying the installation and other costs of a sprinkler system.

Silos are being used more and more to utilize the excess forage growth in the spring when Nature's impetus to the growth rate is greatest (fig. 5). Attempts to make hay at this time of year usually result in spoilage because of weather conditions. Grass silage provides a succulent dairy feed during the winter months and cuts down on the amount of hay needed in the ration. Fourteen percent of the dairy farms in the District had one or more silos in use by the end of 1948. Most of them had been built since 1945. By contrast, only 9 percent of the dairy farms outside the District had silos.

The Soil Conservation District's program has been an important factor in stimulating the interest of the cooperators in carrying on more scientific methods of farming. Better use of their land resources has increased the farmers' interest in better crop- and livestock-management techniques. Increased forage



Figure 4.—Improved, irrigated pastures are the primary reason for the steady gains in butterfat production in the South Tillamook Soil Conservation District.



Figure 5.—Mowing and loading "flush season" grass for ensilage during late June on the T. G. Larson farm, South Tillamook Soil Conservation District. This pasture is grazed regularly throughout the season.

supplies have developed more interest in scientific feeding. A primary objective of these farmers is to provide their herds a well-balanced dairy ration with a minimum of purchased feeds.

Herd-improvement work has gone hand in hand with their interest in better feeding. Greater interest and activity in this work has been shown by the farmers in the Soil Conservation District than in other parts of the county. Dairy-improvement work covered 22 percent of the herds in the District during 1948, as reported by the Association Tester, compared with only 13 percent of the herds elsewhere in the county. One result of this work and of the more abundant forage has been an increasing tendency toward raising more of their herd-replacement stock from their proven producers,

rather than purchasing cows from outside the county. All these things have contributed to greater and more efficient production.

The success and progress of the District's program thus far is a definite mark of its profitableness. Since the original South Tillamook Soil Conservation District was created, the District has been enlarged five different times by petition of farmers who at the time were situated outside the boundaries. In 1948 the remaining agricultural lands of Tillamook County were voted into a newly formed North Tillamook Soil Conservation District. By the end of 1950, 85 farmers were cooperating with the new District. The farmers of Tillamook County have proof that conservation farming pays.

L I B R A R Y

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MAR 11 1952

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